PCT/CH2002/000494

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 153772.1/LE/mb	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/CH2002/000494	International filing date (*day/month/year*) 09 September 2002 (09.09.2002)	Priority date (*day/month/year*)
International Patent Classification (IPC) or national classification and IPC H01J 35/16, 19/60		
Applicant COMET HOLDING AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 12 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
08 March 2004 (08.03.2004)	20 July 2004 (20.07.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/CH2002/000494

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:

pages 1, 2, 7, 10-12, as originally filed
pages _____, filed with the demand
pages 3, 3a, 4, 5, 5a, 6, 8, 9, 13, filed with the letter of 24 June 2004 (24.06.2004)

☒ the claims:

pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1-14, filed with the letter of 24 June 2004 (24.06.2004)

☒ the drawings:

pages 1-7, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages _____
☒ the claims, Nos. 15
☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/CH 02/00494

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-14	YES
	Claims		NO
Inventive step (IS)	Claims	1-14	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-14	YES
	Claims		NO

2. Citations and explanations

1. This international preliminary examination report makes reference to the following documents:
D1: EP-5402464
D8: DE-19800766.

2. Clarity (PCT Article 6)

The present claim 12 defines a method for producing a high voltage vacuum tube according to claims 1 to 11, without, however, clearly defining the method steps to be carried out in order to produce the high voltage vacuum tube. Therefore, the present claim lacks clarity within the meaning of PCT Article 6 (cf. PCT Guidelines, paragraph III-4.4).

3. Novelty (PCT Article 33(2))

3.1 D1 discloses a high voltage vacuum tube (X-ray tube) according to the preamble of the present claim 1. The arch projecting toward the tube interior encompasses a sloping front area, a truncated lateral area and a raised lateral area. The sloping front area of the annular cathode insulator is sloped away from the disc center of the annular

insulator.

The front area and the lateral areas of the annular insulator in D1 are not, however, arranged at an angle with respect to the axial direction of the annular insulator as defined in claim 1.

3.2 D8 discloses a high voltage vacuum tube (X-ray tube) with an annular insulator embodied on the cathode side, said annular insulator having an arch projecting toward the tube interior with a sloping front area, a truncated lateral area and a raised lateral area. The sloped front area of the annular cathode insulator is sloped away from the disc center of the annular insulator. D8 does not indicate that the front area and the lateral areas of the annular insulator in D1 are arranged at an angle with respect to the axial direction of the annular insulator, but the front area and the raised lateral area appear, proceeding from the figure in D8, to be arranged at an angle like that defined in claim 1.

The high voltage vacuum tube in D8 does not, however, have a cylindrical metal housing. Furthermore, the angle γ of the truncated lateral area appears to have a value of $\gamma=0°$ (designated as in claim 1).

3.3 The other documents cited in the international search report are less relevant than D1 and D8 to claim 1.

Consequently, the subject matter of the present claim 1 and therefore also of dependent claims 2-11, 13 and 14

appears to be novel (PCT Article 33(2)).

A method for producing a high voltage vacuum tube according to claim 1 (cf. claim 12) that clearly defined the method steps to be carried out in order to produce a high voltage vacuum tube according to claim 1 would likewise be regarded as novel.

4. **Inventive step (PCT Article 33(3))**

None of the documents cited in the international search report discloses an annular insulator with the front area and the two lateral areas arranged at an angle as defined in claim 1.

Furthermore, none of the documents (such as D1 and D8) render it obvious to select the angles α, β, and γ (designated as in claim 1) as defined in claim 1.

Also, there does not appear to be a reason for the special shape of the annular insulator in D8. This shape could, for example, be associated with the special housing design (constriction in the center and a conical shape on the cathode side). Therefore, it cannot be regarded as obvious for a person skilled in the art to use this annular insulator in a high voltage vacuum tube like that known from D1. Even if this were the case, at least the angle γ of the truncated lateral area would differ from that of the present claim 1.

Consequently, the subject matter of the present claim 1 and therefore also that of dependent claims 2-11, 13 and 14 appears to be inventive (PCT Article 33(3)).

A method for producing a high voltage vacuum tube according to claim 1 (cf. claim 12) that clearly defined the method steps to be carried out in order to produce a high voltage vacuum tube according to claim 1 would likewise be regarded as inventive.

5. Industrial applicability (PCT Article 33(4))

The subject matter of the present claims 1-11, 13 and 14 appears clearly to be industrially applicable (PCT Article 33(4)).

A method for producing a high voltage vacuum tube according to claim 1 (cf. claim 12) that clearly defined the method steps to be carried out in order to produce a high voltage vacuum tube according to claim 1 would likewise be regarded as industrially applicable.